Work Orde January-23-13 9	r ID 96131 :46:36 AM		*961	31*							Page 1	
Revision ID:	D3065-7 Step Spacer		Accept	*N900	<u>040</u>	100)*	Setup	Start Stop	I VI	S1* S2*	
Start Date: Required Date: 2 Reference:	1/23/13 Start Qty: 20.0 2/01/13 Req'd Qty: 20.0	, , ,		Cust Item l Customer:	D:							
	Process Plan: MLD		_		ate:			Run	Start Stop	1/1	R1* R2*	
Sequence ID/ Work Center ID			Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	t Rej Qty		Reject Number	Insp. Stamp	
Draw Nbr	Revision Nbr										,	
D3065	Rev B		0.00						······································		- 10	
*100 *100* Waterjet FLOW CNC Waterjet		per Dwg D3065 Dwg Rev:_ necessary	0.00 8 0.00 Prog Rev: 8	2-			20			(045 05 25	3-05.0
*110 *11 0* QC Quality Control	QC2- Inspect parts of Memo	f machine FAI/FAIB	0.00				20			(05 05 3	o 05°0
120 *120* QC	. · QC8- Inspect parts - s Memo	econd check	0.00 PS			2 >	1 5					i ·
Quality Control			12.0	*			•					

Quality Control

				DQA:	Date:	
NCR:	Yes /	No	WORK ORDER NON-CONFORMANCE / UPDATE			

											QA Closed:	Date:	
Work Orde	er:					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
				-		Rework			Skid-tube	Crosstube		Water Jet	Engineering
Part f	۷o					Scrap	↓		Machining	Small Fab		d. Eng. Coor.	Quality
						Use-as-is	↓ 		noforming	Finishing	Rec/Stor	re/Packaging	Other
NCR I	No					Work Order Update]		Large Fab	Composite		Supplier	
Root						ption of work order update	1	iitial		ction	Sign &		
Cause		Date	Step	Qty	(or Non-conformance	Chie	ef Eng	Des	cription	Date	Verification	QC Inspector
Doc/Data	Ш												
Equip/Tooling	Ш												
Operator		ļ											
Material	Ш	7-	:										
Setup	Ш												
Other	Ш											}	
Process].						
Supplier													
Training	Ш												
Unapproved							<u> </u>		<u></u>		<u> </u>		
						F.	AULT	CATE	GORY				<u> </u>
Landi	ng Ge	ar				General				_	7	£*.	7
	В	ending				Bend	Щ	Grain			Ovalized	_	Pressure/Forced
	Щc	entre No	t Concer	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under		Temperature/Cure
		racks				Broken/Damaged		•	on Incomplete		Part Incorre		Weld
	Шc	rushed/0	Crimped.			Burrs	<u> </u>	Instruct	ions Incomplete	/Unclear	Part Lost/M	issing	Wrong Stock Pulled
,	c	uffs				Contamination	<u></u>	Mainte	enance	<u></u>	Part Moved		
	Шн	leat Trea	t			Countersink	1	Mislabe	eled		Positioned V	Vrong	_
	∐lr	nspection	n Strip in	Tube		Cut Too Short		Misread	4	<u> </u>	Power Loss/	Surge	Other
	R	ipples in	Bend			Drill Holes		Offset				····	
	Пт	orque W	aves in E	xtrusio	n [Drawing	<u></u> [_]	Out of 0	Calibration				· · · · · · · · · · · · · · · · · · ·
	Пт	urning Se	equence			Finish	\square	Out of S	Sequence				
	Įν	Vave/Twi	ist in Tub	e		Folio		Outside	Dimensions				

Work Orde		131		*961	31*						Page 2
Item ID: Revision ID: Item Name: Start Date: Required Date: Reference:	D3065-7 Step Spacer 1/23/13 2/01/13	Start Qty: 20.00 Req'd Qty: 20.00	*20* *20*	Accept	*N900040 Cust Item ID: Customer:	100)*	Setup	Start Stop	17.	S1* S2*
Approvals:		in:	Date:	Tooling: SPC (Y/N):	Date:			Run	Start Stop	1/11	₹1* ₹2*
Sequence ID/ Work Center II 130 *120* Small Fab Small Fab	D	Operation Description Small Fab Memo Deburr if nec	essary	Set Up/ Run Hours 0.00	Tool ID Tool #	Plan Code	Accep Qty	t Rej Qty		Reject Number	Insp. Stamp
140 *140* Brake NC Brake NC		NC BRAKE Memo Bend as per l	Dwg D3065	0.00		€	20	<u> </u>			83 13/0S
150 *150* QC Quality Control		QC5- Inspect part comple	eteness to step on W/O	0.00 0.00	37	•	<i>20</i>				

											DQA:	Date:	
NCR: Y	Yes	/ No				WORK ORDER NON-C	O	NFORN	AANCE / UPDA		·	.	
											QA Closed:	Date:	
Work Orde	or.					DISPOSITION	İ			AGAINST DE	PARTMENT	PROCESS	
Work Orde	ei. -					Rework	1		Skid-tube	Crosstube		Water Jet	Engineering
Part N	Vo.					Scrap	1 1			Small Fab	Pro	d. Eng. Coor.	Quality
	-					Use-as-is		1	oforming	Finishing	Rec/Stor	e/Packaging	Other
NCR N	۷o	··· -				Work Order Update]		Large Fab (Composite		Supplier	
Root					Descri	ption of work order update		nitial	Action	1	Sign &		
Cause		Date	Step	Qty	C	or Non-conformance	Ch	ief Eng	Descript	tion	Date	Verification	QC Inspector
Doc/Data													
Equip/Tooling	Ш									-			
Operator	Ш							1					
Material	Ш							ł					
Setup	Ш										i i		
Other												:	
Process	Ш			1									
Supplier	Ш												
Training	Ш												1
Unapproved			<u> </u>	1			<u> </u>					<u> </u>	1
							AUL	T CATE	JORY				
Landii	$\overline{}$					General	_	16		 	Ovalized		Pressure/Forced
	-	Bending				Bend	-	Grain		—	Ovalized Over/Under	taloranco	Temperature/Cure
	-	Centre No	ot Concer	ntric to C	^{D/S}	BOM/Route	\vdash	Hardwa		\vdash		 	Weld
	⊢	Cracks			-	Broken/Damaged	\vdash	4	on Incomplete		Part Incorre	-	Wrong Stock Pulled
	${f -}$	Crushed/	Crimped.		-	Burrs	-	4	ions Incomplete/Unc	Liear	Part Lost/Mi Part Moved	issing	
	-	Cuffs	_		<u> </u>	Contamination	\vdash	Mainte		<u> </u>	4	Mrong	
	-	Heat Trea			-	Countersink	-	Mislabe			Positioned V		Other
	\vdash	Inspection		Tube	<u> </u>	Cut Too Short	-	Misread	I	<u> </u>	Power Loss/	onike [Tother
· '	i 1	Ripples in	Bend		ı	Drill Holes	1	Offset					

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde January-23-13		131	·	*961	31*						Page 3
Item ID: Revision ID: Item Name:	D3065-7 Step Spacer			Accept	*N900	040	100)* s	Setup Star	IV	S1* S2*
Start Date: Required Date: Reference:	1/23/13 : 2/01/13	Start Qty: 20.00 Req'd Qty: 20.00	*20* *20*		Cust Item I Customer:	D:					,
Approvals:		an:	Date:	Tooling: SPC (Y/N):		nte:		F	Run Start		IR1*
Sequence ID/ Work Center II 160 *160* HandFinish Hand Finishing	D .	Operation Description Chemical Conversion Coa	at per QSI005 4.1	Set Up/ Run Hours 0.00	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 *170* QC Quality Control		QC3- Inspect Part Finish Memo		0.00			4	20x	<i>'</i> 		JS13/
180		Identify as per dwg & Sto	ck Location	0.00				0 a			Ü

0.00

Memo

180 Packaging

Packaging

NCR:	Yes	/ No				WORK ORDER NON-	COI	NFOR	MANCE / UPI		QA Closed:	Date:	
						1	-		31 ···	*****			
Work Orde	ar.					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
WOIK OIG	٠١٠.					Rework	7		Skid-tube	Crosstube		Water Jet	Engineering
Part N	No.					Scrap	1		Machining	Small Fab	Pro	d. Eng. Coor.	Quality
	•					Use-as-is	1	Thern	noforming	Finishing	Rec/Stor	re/Packaging	Other
NCR I	۷o.					Work Order Update]		Large Fab	Composite		Supplier	
													
Root						ption of work order update	1	nitial	Act		Sign &	M - 25	06 (17 - 17 - 17 - 17
Cause		Date	Step	Qty	(or Non-conformance	Ch	ief Eng	Descr	ription	Date	Verification	QC Inspector
Doc/Data	_		ļ										
Equip/Tooling]								•	
Operator	_		ļ										
Material	_												
Setup		{					1						·
Other	_		Ì										
Process				i i									
Supplier	-												
Training	⊢	1									ŀ		1
Unapproved	<u> </u>	<u>!</u>	ļ	<u> </u>	L		<u> </u>	T CATE	COPY		<u> </u>	L	
Landi	na (Gear		 	···	General	AUI	. CATE	JONT				
Land	, E	Bending				Bend	Г	Grain			Ovalized		Pressure/Forced
	-	Centre No	nt Conce	ntric to		BOM/Route		Hardwa	are		Over/Under	tolerance	Temperature/Cure
	┢	Cracks			`` -	Broken/Damaged		Inspect	ion Incomplete		Part Incorre		Weld
	H	Crushed/	Crimped			Burrs		-	ions Incomplete/l	Unclear	Part Lost/M	issing	Wrong Stock Pulled
		Cuffs	•			Contamination		Mainte	enance		Part Moved		_
		Heat Trea	at		ļ	Countersink		Mislabe	eled		Positioned \	Wrong	_
		Inspection	n Strip in	Tube		Cut Too Short		Misread	d		Power Loss/	'Surge	Other
		Ripples in				Drill Holes		Offset					
		Torque W	/aves in E	xtrusio	n	Drawing		Out of	Calibration				
		Turning S	equence			Finish		Out of	Sequence				

Outside Dimensions

DQA: _____ Date:

Wave/Twist in Tube

Finish Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde		131		*961	131*							Page	4
Item ID: Revision ID: Item Name: Start Date:	D3065-7 Step Spacer 1/23/13	Start Qty: 20.00	*20*	Accept	*N900 Cust Item I		100)*	Setup	Start Stop	14	S1* S2*	
Required Date: Reference:	2/01/13	Req'd Qty: 20.00	*20*		Customer:								
Approvals:	Process Pla	an:	Date:	Tooling:	Da	ate:		J	Run	Start	1/1	R1*	,
	QC:		Date:	_ SPC (Y/N):	Da	ate:				Stop	*N	R2*	
Sequence ID/ Work Center II)	Operation Description QC21- Final Inspection -	Work Order Release	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Rej Qty		Reject Number	Insp. Stamp	
190 QC Quality Control		Memo		0.00				MC	<u>ブ</u>	13	<u>-05-0</u>	8	+
·									Ø 13	b06	4		

		DQA:	Date:	
NCR: Yes / No	WORK ORDER NON-CONFORMANCE / UPDATE			
·		OA Closed:	Date:	

										QA Closed:	Date	
Work Orde	er.					DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Part NCR I	- . No.					Rework Scrap Use-as-is Work Order Update	The	Skid-tube Machining rmoforming Large Fab	Crosstube Small Fab Finishing Composite	4	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root					Descr	iption of work order update	Initial	A	ction	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Chief Er	g Des	scription	Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training												
Unapproved	لـــا		<u> </u>	<u> </u>		F	AULT CA	TEGORY		L	1	· · · · · · · · · · · · · · · · · · ·
Landi	ng G	Gear				General						
		Bending Centre No Cracks Crushed/ Cuffs Heat Trea Inspectio Ripples in Torque W	Crimped at n Strip in n Bend	Tube		Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes Drawing	Instru Mair Misla Misre Offse	ware ction Incomplete actions Incomplete atenance beled ead	e/Unclear	Ovalized Over/Under Part Incorre Part Lost/M Part Moved Positioned V	ct issing Wrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other
	H	Turning S			· -	Finish	\vdash	of Sequence		-		
	_	Wave/Tw	-			Folio	Outs	de Dimensions				

January-23-13 9:46:35 AM

Work Order ID:

96131

Parent Item:

D3065-7

Parent Item Name:

Step Spacer

Start Date: 1/23/13

Required Date: 2/01/13

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF IPP Rev:D Now on Water Jet 06-04-11 JLM

	IFF Kev.D Now (on water jet 00-0	74-11 JL [V]										
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.040		Purchased	No			100	sf	247.2023	0.1574	3.313684		1 10 3	7 36
2024-T3 .040 sheet									*		- M	15.0	12.02

Location	Loc Oty	Loc Code	14.50
MAT022	247.2023252		124987
120605	65.8254832		
121197	64.996842		
122136	31.78		
123217	84.6		

NCR: Y	⁄es	/ No				WORK ORDER NON-	COI	NFORM	/ANCE / UP	DATE			
			. =								QA Closed:	Da	te:
						DISPOSITION				AGAINST D	EPARTMENT,	/PROCESS	
Work Orde Part N	-					Rework Scrap			Skid-tube Machining	Crosstube Small Fab	Pro	Water Jet d. Eng. Coor.	Engineering Quality
NCR N	•					Use-as-is Work Order Update			noforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	Other
Root Cause		Date	Step	Qty		ption of work order update or Non-conformance	1	Initial nief Eng		tion ription	Sign & Date	Verificatio	n QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved													
							AUI	T CATE	GORY				
Landi						General	_	1 ₀		Г	Ovalized		Pressure/Forced
		Bending Centre No Cracks Crushed/ Cuffs Heat Trea	Crimped at		o/s	Bend BOM/Route Broken/Damaged Burrs Contamination Countersink		Instruct Mainte Mislabe	on Incomplete ions Incomplete/ nance iled	'Unclear	Ovalized Over/Under Part Incorre Part Lost/M Part Moved Positioned Power Loss,	ct issing Wrong	Temperature/Cure Weld Wrong Stock Pulled
	\vdash	Inspectio Ripples in		Tube	-	Cut Too Short Drill Holes	\vdash	Misread Offset	1	L	Power Loss,	ouige	Tottlei
	${f -}$	Torque M		Evtrucio	, 	Drawing	-	-{	Calibration				

Out of Sequence

Outside Dimensions

DQA: Date:

Turning Sequence

Wave/Twist in Tube

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	96131
Description: Step Spacer	Part Number:	D3065-7
Inspection Dwg: D3065 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing		Actual			Method of	_	
Dimension	Tolerance	Dimension	Accept	Reject	Inspection	Comments	
Ø0.128	+0.005/-0.000	0.132	1	-	V	TRI-01	
0.865 (Pitch)	+/-0.005	0865			υ		
4.522	+/-0.010	4.519	V		V		
0.250	+/-0.010	0.255			1/		
2.093	+/-0.010	1.098	1		V		
3.936	+/-0.005	3.936			V		
4.186	+/-0.010	4.186	1		V		
Ø1.250	+/-0.005	1.252	1		V		
R0.125	+/-0.010	RO.125	V		RG		
Grain Direction	N/A						
!						,	
					<u></u>		
1							

Measured by:

Audited by:

Date: 13.05.05

Audited by: 27

Date: 13.57

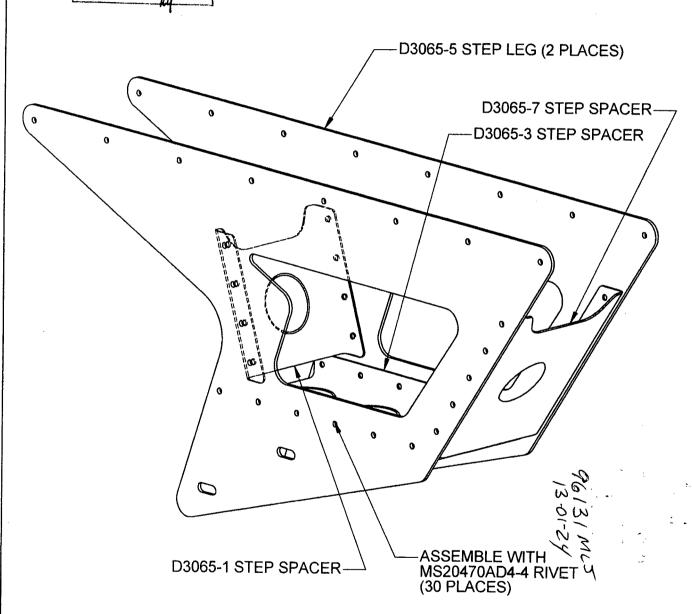
Date: N/A

Rev	Date	Change	Revised by	Approved
Α	03.09.22	New Issue P/O D3065-041	KJ/RF	1 10 10 10 10
В	04.05.15	Removed 0.531, 3.686, 0.580; Added 3.936 dimensions	K I/ II M	
С		Dwg Rev. changed	KJ/JLM	Gil!



DESIGN	8	DRAWN BY	DART AEROSPACE HAWKESBURY, ONTARIO, CAI			
CHECK	ED Ou	APPROVED	DRAWING NO.	REV. B		
	817		D3065	SHEET 1 OF 5		
DATE	06.0)5.23	TITLE CALCOLARY	SCALE		
	00.0	75.25	STEP LEG ASSEMBLY	1:2		
Α	02	2.09.11	NEW ISSUE			
В	06.05.23		ADD 6061-T6 MATERIAL, ADD SLOTS TO D3065-5			

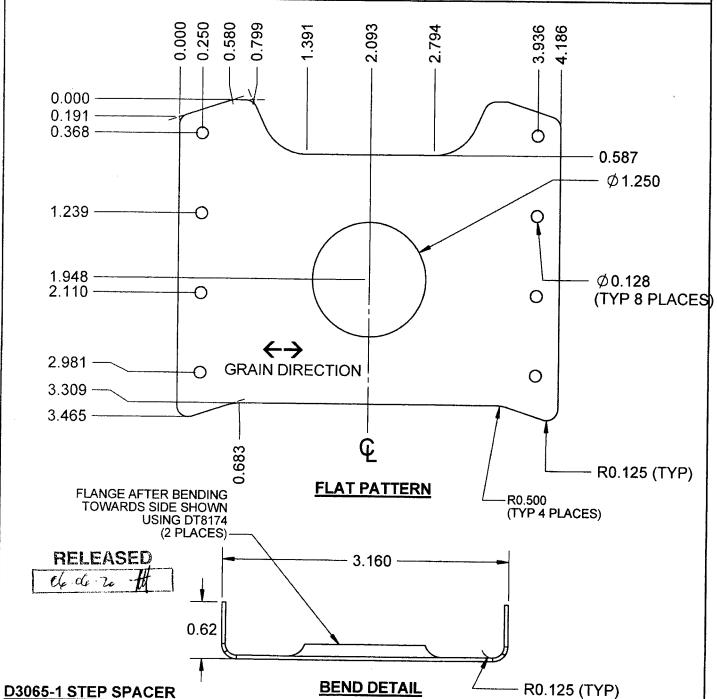
RELEASED 06 c6 20 -



D3065-041 STEP LEG ASSEMBLY







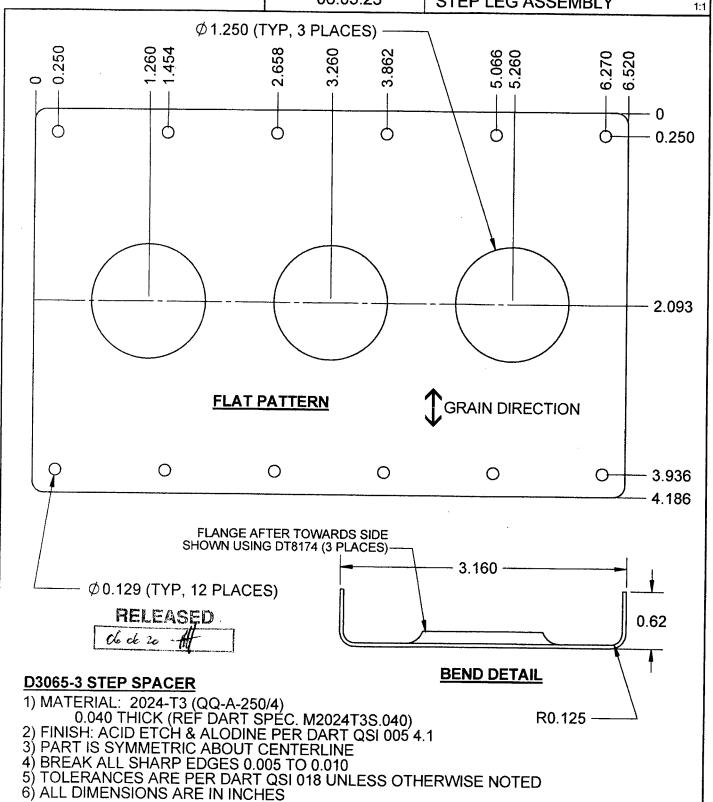
- 1) MATERIAL: 2024-T3 (QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040) 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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96131

CHECKED 06.05.23 9 STEP LEG DRAWING NO. D3065 DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA **ASSEMBLY**

SHEET 4 OF 5 REV. B

SCALE

RELEA 16.458 8 15.750 (2.250 PITCH) \emptyset 0.128 (DRILL #30) (TYP 23 PLACES) 0 0 0 0 1.640 0 8.325 3.460 3.484 (0.871 PITCH) (0.865 PITCH) 0.551 SEE DETAIL A 0.741 0.2132.770 6.020 DETAIL A (2 PLACES) D3065-5 STEP LEG (1.205 PITCH) 1) MACHINE PER DWG FILE "D3065-5.SLDPRT" 2) MATERIAL: 6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK (REF DART SPEC M6061T6S.080)

5052-H32 (PER QQ-A-250/8 OR AMS 4016) 0.080 THICK (REF DART SPEC. M5052H32S.080)
3) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
4) BREAK ALL SHARP EDGES 0.005 TO 0.010
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES

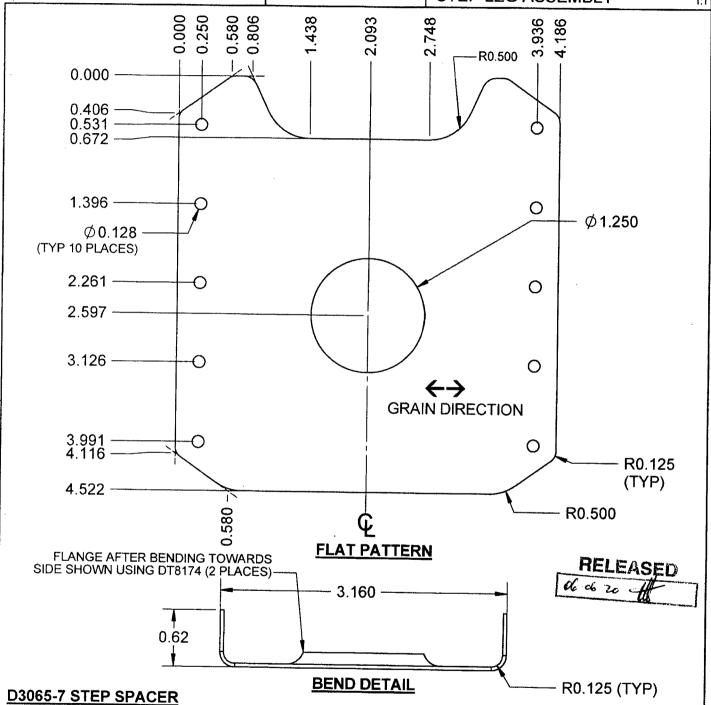
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- 1) MATERIAL: 2024-T3 (PER QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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